

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants	Hans David Hoeg, <i>et al.</i>
Application No. 10/657,110	Filing Date: September 9, 2003
Title of Application:	Method For Using VDOV Endoscopy In Conjunction With IGS
Confirmation No. 9223	Art Unit: 3739
Examiner	Philip R. Smith

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
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Alexandria, VA 22313-1450

**Reply Brief Under 37 CFR §41.41**

Dear Sir:

Having received the Examiner's Answer, Appellant submits this Reply Brief for the above-captioned application pursuant to 37 C.F.R. §41.41 as follows.

**Reply to Examiner's Response**

Appellant has fully set forth its arguments for patentability in its previously filed Appeal Brief. Herein, Appellant briefly addresses the Examiner's Responses to Appellant's arguments, as set forth in the Examiner's Answer.

Appellant respectfully submits that the Examiner appears to have mistakenly construed the trackable change in "orientation," which is described in Chen, as the same thing as a change in the configuration of an internal view changing mechanism (e.g., prism). This error appears in each of the Examiner's responses to Applicant's four basic arguments. Accordingly, the Examiner's arguments regarding the alleged suggestion to modify and the alleged lack of any teachings away from the proposed combination all appear to flow from this error.

The Chen reference discusses a tracking system 97, mounted to the exterior of an endoscope 90 (see Chen Fig. 1), that can track the spatial position and orientation (i.e., yaw, pitch, roll) of the scope. This is described in several portions of the Chen specification, including the top of Column 5, which explains:

More particularly, endoscope tracking means 50 may comprise ***a tracking system 97 of the sort adapted to monitor the position and orientation of an object in space and to generate output signals which are representative of the position and orientation of that object.*** By way of example, tracking system 97 might comprise an optical tracking system, an electromagnetic tracking system, an ultrasonic tracking system, or an articulated linkage tracking system, among other alternatives. Such tracking systems are all well known in the art and hence need not be described in further detail here. ***Tracking system 97 is attached to endoscope 90 such that the output signals generated by tracking system 97 will be representative of the spatial positioning and orientation of endoscope 90.***

Col.5, Ins. 4-17. See also Col.3, Ins. 11-17 ("tracking means that are adapted so as to determine the spatial positioning and orientation of the real-time sensor and/or the physical structure... the real-time sensor may comprise an endoscope and the physical structure may comprise an interior anatomical structure...").

The tracking system described in Chen is clearly a tracking system that simply tracks changes in the spatial position and orientation of the endoscope itself. In other words, the endoscope can change "position" by pivoting the scope left or right and/or pitching the scope up or down. Similarly, the orientation of the scope can change by rolling it about its longitudinal axis. Chen offers no disclosure of measuring anything other than changes in this spatial position/orientation of the scope.

The Examiner, however, has apparently read Chen's discussion of tracking the "orientation" of the scope as detecting the configuration of an internal mechanism in the scope. This appears throughout the Examiner's Answer:

- When arguing why there is a suggestion to combine Chen and Dohi, the Examiner states: "Chen's generically defined 'endoscope 90' allows for changing position *and orientation*. Dohi's endoscope simply provides that *orientation* may advantageously be changed while not disturbing position, a clear suggestion to modify Chen's invention." Answer at 10.
- When arguing that the references are enabling with respect to making the proposed modification, the Examiner states: "However, it is clear to a skilled artisan that the 'rotary encoders 9 and 10' disclosed by Dohi are intended for tracking *the orientation of the endoscope*. Dohi explicitly discloses a 'prism' position-detecting part 14' ([0024]) *which is analogous to the orientation-tracking component* of the 'tracking system 97.'" Answer at 10-11.
- When arguing that Dohi's stated objective of acquiring images *without moving of the bending the scope* does not teach away from the proposed combination, the Examiner states: "In other words, Dohi enables a change in the *orientation of the endoscope* without requiring a change in the position of the endoscope. It is not clear how this 'specifically teach[es] away' from anything disclosed by Chen, who discloses only that both position and *orientation* must be monitored." Answer at 11.
- When responding to Appellant's argument that one would still not arrive at the claimed invention even if the references were combined (and Dohi's internal

view changing mechanism were employed in Chen) because there is still no suggestion of acquiring configuration data of that internal mechanism and using it to display representations of the subsurface structure and the endoscopic line of sight in their correct relative spatial relationship, the Examiner states: "tracking system 97 may be considered as dually functioning: first, for tracking position, and second, for tracking *orientation*" and thus, that "Chen discloses just such an arrangement". Answer at 11, 12.

Appellant respectfully submits that, as evidenced by each of these responses, the Examiner has misapplied the disclosure of Chen. Chen discloses only a tracking system for "tracking" physical position and orientation of the endoscope itself. It provides no teaching or suggestion regarding obtaining data pertaining to the configuration of internal mechanisms of the scope, such as (in this case) an internal view changing mechanism, and basing the display of representations of the subsurface structure and the endoscopic line of sight in their correct relative spatial relationship partially on such data. While one may refer to changing the configuration of an internal view changing mechanism (such as a prism) as changing the "orientation" of *the view vector*, this is completely different than changing the spatial position and orientation of the scope and is not disclosed or suggested by Chen.

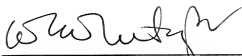
Moreover, as explained in its Appeal Brief, Appellant again notes that, notwithstanding the lack of any motivation to combine and the teachings against doing

so, even if these references were combined, one would still not arrive at the present invention, because the combination would still not produce a device that uses these multiple forms of data to display representations of the subsurface structure and the endoscopic line of sight in their correct relative spatial relationship. Instead, the suggested combination may arguably further adjust the image based on the information received from the encoders (9, 10), though it is difficult to understand from the disclosure of Dohi precisely what the controller (11) supposedly does after receiving these signals. What is clear, however, is that *Dohi simply offers no disclosure of displaying representations of the subsurface structure and the endoscopic line of sight in their correct relative spatial relationship based on data regarding the view vector.*

For the reasons set forth in Appellant's Appeal Brief, not only is there no suggestion to make this modification, but the references do not enable the proposed modification, actually teach away from the combination, and finally, still do not result in the claimed invention even if the proposed modification to Chen were made. For the foregoing reasons, as well as those set forth in Applicant's previously filed Appeal Brief, it is respectfully submitted that the claimed invention is patentable over the cited art. Accordingly, it is submitted that the rejection of claims 9-13 should be reversed.

Respectfully submitted,

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